CLAIMS

1.   A knitting machine comprising:

at least one knitting needle;

at least one positive yarn feed device for feeding yarn to said at least one knitting needle;

needle monitoring means for providing information relating to the at least one knitting needle during the course of a knitting operation; and

a controller for controlling the operation of the positive yarn feed device;

in which the controller is adapted to: receive information from the needle monitoring means during the course of a knitting operation; use said information to calculate a desired amount of yarn to be fed to a knitting needle; and control the positive yarn feed device so that the positive yarn feed device feeds the desired amount of yarn to the knitting needle during the course of the knitting operation.

2.   A knitting machine according to claim 1 in which the needle monitoring means provides needle selection data.

3.   A knitting machine according to claim 1 or claim 2 in which the positive yarn feed device comprises a servomotor which is controlled by the controller.

4.   A knitting machine according to any of claims 1 to 3 further comprising at least one stitch cam, in which the operation of the stitch cam is controlled by the controller during the course of a knitting operation.

5.   A knitting machine according to claim 4 in which the stitch cam comprises a stitch cam motor for varying the position of said stitch cam, and the operation of the stitch cam motor is controlled by the controller during the course of a knitting operation.

6.   A knitting machine according to claim 5 in which the stitch cam motor comprises a stepper motor.

7.   A knitting machine according to claim 5 or claim 6 in which the stitch cam motor comprises a servomotor.

8.   A knitting machine according to any of claims 4 to 7 in which the controller controls the operation of the stitch cam so as to produce knitted loops of predetermined characteristics, preferably a predetermined stitch length.

9.   A knitting machine according to any previous claim further comprising fabric take down means, in which the operation of the fabric take down means is controlled by the controller during the course of a knitting operation.

10.   A knitting machine according to claim 9 in which the fabric take down means comprises a fabric take down motor, and the operation of the fabric take down motor is controlled by the controller during the course of a knitting operation.

11.   A knitting machine according to claim 10 in which the fabric take down motor comprises a servomotor.

12.   A knitting machine according to any of claims 9 to 11 in which the controller controls the operation of the fabric take down means in accordance with the stitch length employed by the knitting machine.

13.   A knitting machine according to any previous claim further comprising tension measuring means for measuring the tension of yarn fed to the at least one knitting needle; in which the yarn tension measured by the tension measuring means is communicated to the controller, and the controller utilises the measured yarn tension to control the knitting operation.

14.   A knitting machine according to claim 13 when dependent on any one of claims 4 to 8 in which the controller controls the operation of the stitch cam in accordance with the yarn tension measured by the tension measuring means.

15.   A knitting machine according to claim 13 or claim 14 when dependent on any one of claims 9 to 12 in which the controller controls the operation of the fabric take down means in accordance with the yarn tension measured by the tension measuring means.

16.   A flat-bed knitting machine according to any previous claim.

17.   A method of knitting comprising the step of:

          knitting a knitted structure with at least one yarn whilst supplying an amount of said yarn to at least one knitting needle using at least one positive yarn feed device;

          the method further comprising the steps of:

providing information relating to the at least one knitting needle during the course of the knitting;

using said information to calculate a desired amount of yarn to be fed to a knitting needle; and

controlling the positive yarn feed device so that said device feeds the desired amount of yarn to the knitting needle during the course of the knitting.

18.   A method according to claim 17 in which needle selection data are provided.

19.   A method according to claim 17 or claim 18 further comprising the step of controlling the operation of a stitch cam during the course of the knitting.

20.   A method according to claim 19 in which the step of controlling the operation of the stitch cam comprises controlling the operation of a stitch cam motor, which stitch cam motor varies the position of said stitch cam.

21.   A method according to claim 19 or claim 20 in which the operation of the stitch cam is controlled so as to produce knitted loops of predetermined characteristics, preferably a predetermined stitch length.

22.   A method according to any of claims 17 to 21 further comprising the step of controlling the operation of fabric take down means during the course of the knitting.

23.   A method according to claim 22 in which the step of controlling the fabric take down means comprises controlling the operation of a fabric take down motor.

24.   A method according to claim 22 or claim 23 in which the operation of the fabric take down means is controlled in accordance with the stitch length employed during the knitting.

25.   A method according to any of claims 17 to 24 further comprising the step of measuring the tension of yarn fed to the at least one knitting needle, in which the measured yarn tension is utilised to control the knitting.

26.   A method according to claim 25 in which the operation of the stitch cam is controlled in accordance with the measured yarn tension.

27.   A method according to claim 25 or claim 26 in which the operation of the fabric take down means is controlled in accordance with the measured yarn tension.

28.   A method of knitting according to any of claims 17 to 27 in which knitting is performed on a flat bed knitting machine.

29.   A method according to any of claims 17 to 28 in which the stitch length is varied.